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May 24, 2004

Chairman and Commissioners
Public Utilities Commission
of the State of Hawaii
465 South King Street
First Floor
Honolulu, HI 96813

FILED
2004 MAY 24 P 2:20
PUBLIC UTILITIES
COMMISSION

Re: **Docket No. 03-0371, Instituting A Proceeding To Investigate
Distributed Generation In Hawaii.**

Dear Chairman and Commissioners:

Enclosed for filing on this date in the above-captioned docket are the original and eight copies of the Instructions and Certificate of Service, and Information Requests of Johnson Controls, Inc.

Should you have any questions, please do not hesitate to contact me at (808) 331-2027. Thank you for your attention to this matter

Sincerely,



Thomas C. Gorak

Enclosures

GORAK & BAY, L.L.C.
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May 24, 2004

**To: All Parties and Participants in Docket No. 03-0371,
Instituting A Proceeding To Investigate Distributed
Generation In Hawaii.**

**From: Thomas C. Gorak
Attorney for Johnson Controls Inc.**

Re: Information Requests

Enclosed please find the Instructions and Certificate of Service, and Information Requests of Johnson Controls, Inc. The requests are numbered sequentially. Requests for the Companies (Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company) appear on pages 1 to 34. Requests for Hess Microgen appear on pages 35 to 37. Requests to all other Parties and Participants appear on pages 37 and 38.

Should you have any questions, please do not hesitate to contact me at (808) 331-2027. Thank you for your attention to this matter

Before The Public Utilities Commission
Of The State Of Hawaii

Docket No. 03-0371

Information Requests Of Johnson Controls, Inc.,
To All Parties And Participants

Set 1

May 24, 2004

INSTRUCTIONS TO ALL PARTIES AND PARTICIPANTS
AND CERTIFICATE OF SERVICE

1. With respect to the attached information requests, your response should comply with all applicable rules for proceedings before the Public Utilities Commission of the State of Hawaii, as well as Prehearing Order No. 20922.
2. Please identify the person(s) responsible for the preparation of each information response.
3. Information responses should be supplemented if you obtain information upon the basis of which you know that any response which you earlier provided was incorrect when made or is now incorrect in any material respect.
4. Throughout these information requests, the term "documents" refers to all writings and records of every type in your possession, control, or custody, including, but not limited to, memoranda, correspondence, reports (including drafts, preliminary, intermediate and final reports), surveys, studies (including, but not limited to, load flow, engineering, general economic and market studies), analyses (including, but not limited to, load flow, engineering, general economic and market analyses), comparisons, tabulations, charts, books, pamphlets, photographs, maps, bulletins, minutes, notes, diaries, newspaper clippings, log sheets, ledgers, transcripts, microfilm, computer data files, tapes, inputs, outputs, and print outs, vouchers, accounting statements, engineering diagrams (including "one-line" diagrams), mechanical and electric recordings, telephone and telegraphic communication, speeches, and all other records, written, electrical, mechanical, and otherwise.

"Documents" shall also refer to copies of documents, even though the originals are not in your possession, custody, or control, every copy of a document which contains handwritten or other notations or which otherwise does not duplicate the original or any other copy, and all attachments to any documents.

5. The following abbreviations are used throughout these requests:

“PUC” or “Commission” Public Utilities Commission Of The State Of
Hawaii

“JCI” Johnson Controls, Inc.

“DG” Distributed Generation

If you are unclear as to any other abbreviation used in these requests, please contact the undersigned. In addition, if a reference is unclear, please contact the undersigned.

6. We request that you provide electronic and hard copies of the responses (including the full text of any cross-referenced responses) to:

Thomas C. Gorak
Gorak & Bay, L.L.C.
76-6326 Kaheiau Street
Kailua-Kona, HI 96740-3218

Gordon Bull
Johnson Controls, Inc.
3526 Breakwater Court
Hayward, C 94545

7. If there is any ambiguity in interpreting either the requests or a definition or instruction applied thereto, please contact Thomas C. Gorak at 808-331-2027.
8. If any document covered by these requests is withheld for any reason, please furnish a list identifying the withheld documents along with the following information:
- (a) the reason for withholding;
 - (b) date of document;
 - (c) name of each author or preparer;
 - (d) name of each person who received the document; and
 - (e) a statement of the reasons for withholding the document.
9. Please consider these information requests to be of a continuing nature. Accordingly, please provide updated information as circumstances change.

10. We would appreciate receiving your responses as soon as they are prepared. If you have any questions, please contact us.

Thank you for your cooperation.

A handwritten signature in black ink, reading "Thomas C. Gorak". The signature is fluid and cursive, with a long horizontal stroke at the end.

Thomas C. Gorak
Gorak & Bay, LLC
76-6326 Kaheiau Street
Kailua-Kona, HI 96740-3218
808-331-2027
GorakandBay@hawaii.rr.com

CERTIFICATE OF SERVICE

I hereby certify that on this day I have served a copy of the foregoing Instructions and Information Requests of Johnson Controls, Inc. by depositing same in the United States Mail, first class postage prepaid (unless otherwise indicated), and addressed to the following:

Public Utilities Commission 465 South King Street First Floor Honolulu, HI 96813 (hand delivery)	Original plus 8 copies
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Division of Consumer Advocacy 335 Merchant Street Room 326 Honolulu, HI 96813 (hand delivery)	3 copies
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Thomas W. Williams, Jr. Esq. Peter Y. Kikuta, Esq. Goodsill, Anderson, Quinn & Stifel Alii Place, Suite 1800 1099 Alakea Street Honolulu, Hawaii 96813	1 copy
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William A. Bonnet Vice President Hawaiian Electric Company, Inc. Hawaii Electric Light Company, Inc. Maui Electric Company, Limited P. O. Box 2750 Honolulu, Hawaii 96840-0001	1 copy
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Patsy H. Nanbu Hawaiian Electric Company, Inc. P. O. Box 2750 Honolulu, Hawaii 96840-0001	1 copy
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Alan M. Oshima, Esq. Kent D. Morihara, Esq. 841 Bishop Street, Suite 400 Honolulu, Hawaii 96813	2 copies
--	----------

Alton Miyamoto President & CEO Kauai Island Utility Cooperative 4463 Pahe'e Street Lihue, Hawaii 96766	1 copy
George T. Aoki, Esq. The Gas Company P.O. Box 3000 Honolulu, HI 96802-3000	1 copy
Steven P. Golden The Gas Company P.O. Box 3000 Honolulu, HI 96802-3000	1 copy
Gail S. Gilman The Gas Company P.O. Box 3000 Honolulu, HI 96802-3000	1 copy
Brian T. Moto Corporation Counsel County of Maui Department of the Corporation Counsel 200 S. High Street Wailuku, HI 96793	1 copy
Cindy Y. Young Deputy Corporation Counsel County of Maui Department of the Corporation Counsel 200 S. High Street Wailuku, HI 96793	1 copy
Kalvin K. Kobayashi, Energy Coordinator County of Maui Department of Management 200 S. High Street Wailuku, HI 96793	1 copy

Warren S. Bollmeier II, President Hawaii Renewable Energy Alliance 46-040 Konane Place, #3816 Kaneohe, Hawaii 96744	1 copy
John Crouch Box 38-4276 Waikoloa, HI 96738	1 copy
Rick Reed Inter Island Solar Supply 761 Ahua Street Honolulu, HI 96819	1 copy
Henry Curtis Life of the Land 76 North King Street, Suite 203 Honolulu, HI 96817	3 copies
Sandra –Ann Y. H. Wong, Esq. 1050 Bishop Street, #514 Honolulu, Hawaii 96813	1 copy
Christopher S. Colman Deputy General Counsel Amerada Hess Corporation One Hess Plaza Woodbridge, N.J. 07095	1 copy
Michael de’Marsi Hess Microgen 4101 Halburton Road Raleigh, NC 27614	1 copy
Gordon Bull Branch Manager Johnson Controls, Inc. 3526 Breakwater Court Hayward, CA 94545	1 copy
Jim Reisch Pacific Machinery, Inc. 94-025 Farrington Highway Waipahu, Hawaii 96797	1 copy

Lani D. H. Nakazawa, Esq. 2 copies
Office of the County Attorney
County of Kauai
4444 Rice Street, Suite 220
Lihue, HI 96766

Glenn Sato, Energy Coordinator 1 copy
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Department of the Attorney General
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Chief Technology Officer
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P. O. Box 2359
Honolulu, HI 96804

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Energy Analyst
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P. O. Box 2359
Honolulu, HI 96804

Dated: May 24, 2004.



Thomas C. Gorak
Hawaii Bar No. 0007673

Gorak & Bay, L.L.C.
76-6326 Kaheiau Street
Kailua-Kona, HI 96740-3218
808-331-2027

Attorney for Johnson Controls, Inc.

Before The Public Utilities Commission
Of The State Of Hawaii

Docket No. 03-0371

Information Requests Of Johnson Controls, Inc.

Set 1

May 24, 2004

Information Requests From Johnson Controls, Inc. ("JCI") To Hawaiian Electric Company, Inc. ("HECO"), Hawaii Electric Light Company, Inc. ("HELCO"), And Maui Electric Company, Inc. ("MECO"), collectively referred to as the "Companies". References to the "Companies" include each individual company.

Requests and instructions directed to "the Companies" or to each individual Company should be construed to include responsive information in the possession of HECO, HELCO, and MECO, and their employees, affiliates, agents, consultants, and attorneys.

JCI-IR-1. Please provide a complete copy of all data requests served by all other Parties and Participants to this proceeding on the Companies and the Companies responses thereto.

JCI-IR-2. Reference Companies' Exhibit A, p. 1. What do the Companies mean when they state that "small" should be relative to the utility's system loads and to the loads of large customers? What do the Companies mean by, and how do the Companies define, "large customers"?

JCI-IR-3. Reference Companies' Exhibit A, p. 1. Please identify those cogeneration facilities on each of the Companies' systems that should not be considered distributed generation for purposes of this proceeding.

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Of The State Of Hawaii

Docket No. 03-0371

Information Requests Of Johnson Controls, Inc.

Set 1

May 24, 2004

- JCI-IR-4. Reference Companies' Exhibit A, p. 1. Please explain what is meant by the phrase "sustainable in the long-term (i.e., backed up by adequate infrastructure support with respect to O&M and fuel)." Please provide copies of any documents that describe or quantify these concepts for each of the Companies
- JCI-IR-5. Reference Companies' Exhibit A, p. 1. Please explain what is meant by the phrase "able to meet the perceived needs of customers."
- JCI-IR-6. Reference Companies' Exhibit A, p. 2. Please describe the substation-sited peaking generation (i.e. HELCO's four dispersed 1 MW generators) and the substation-sited generation to address a case-specific transmission problem (MECO's Hana generator). Please provide copies of any documents that generally describe these facilities and a reference to the PUC docket(s) in which such facilities were authorized.
- JCI-IR-7. Reference Companies' Exhibit A, p. 2. Please state whether there is currently operating any customer-sited generation, operated in parallel with the utility grid, for electricity power purposes only. Please provide copies of any documents that generally describe these facilities and a reference to the PUC docket(s) in which such facilities were authorized.

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Information Requests Of Johnson Controls, Inc.

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- JCI-IR-8. Reference Companies' Exhibit A, p. 2. Please provide copies of any documents that the Companies used to derive the thermal efficiencies quoted for CHP systems and conventional central station generating units.
- JCI-IR-9. Reference Companies' Exhibit A, p. 2. Please provide copies of any documents that the Companies used to derive the conclusions concerning ICEs (which appear at the bottom of page 2 and the top of page 3).
- JCI-IR-10. Have any of the Companies installed ICEs for their customers? If so, please provide details of any such installations, copies of any documents that generally describe these facilities, and a reference to the PUC docket(s) in which such facilities were authorized.
- JCI-IR-11. Reference Companies' Exhibit A, p. 3. Have any of the Companies installed microturbines for their customers? If so, please provide details of any such installations, copies of any documents that generally describe these facilities, and a reference to the PUC docket(s) in which such facilities were authorized.
- JCI-IR-12. Reference Companies' Exhibit A, p. 3. Have any of the Companies installed fuel cells for their customers? If so, please provide details of any such installations, copies of any documents that generally describe these facilities, and a reference to the PUC docket(s) in which such facilities were authorized.

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Information Requests Of Johnson Controls, Inc.

Set 1

May 24, 2004

- JCI-IR-13. Reference Companies' Exhibit A, p. 5. Would the Companies permit a customer to install DG facilities on Company property if the customer did not purchase such facilities or any related services from the Companies? If no, why not? If yes, under what terms and conditions?
- JCI-IR-14. Reference Companies' Exhibit A, p. 5. Please provide copies of any documents relied upon by the Companies to support the conclusion that "[b]asic economics is the single major impediment to the wide-spread deployment of DG in Hawaii." Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-15. Reference Companies' Exhibit A, p. 7. Please state whether any of the Companies currently offer customer-sited emergency generation facilities and/or services. If so, please describe such facilities and provide a reference to any tariff provision and/or PUC docket(s) that authorizes any of the Companies to offer such facilities and/or services.
- JCI-IR-16. Reference Companies' Exhibit A, p. 7. Please state whether any of the Companies currently offer customer-sited cogeneration facilities and/or services. If so, please describe such facilities and provide a reference to any tariff provision and/or PUC docket(s) that authorizes of the Companies to offer such facilities and/or services.

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Information Requests Of Johnson Controls, Inc.

Set 1

May 24, 2004

- JCI-IR-17. Reference Companies' Exhibit A, p. 7. Please state whether any of the Companies currently offer customer-sited generation operated in parallel with the utility grid. If so, please describe such facilities and provide a reference to any tariff provision and/or PUC docket(s) that authorizes of the Companies to offer such facilities and/or services.
- JCI-IR-18. Reference Companies' Exhibit A, p. 8. Have any of the Companies conducted any analysis, or had any analysis conducted for them, of how they will determine whether utility ownership of a CHP system is cost-effective and does not burden non-participating customers? If so, please provide copies of any documents concerning such analyses.
- JCI-IR-19. Reference Companies' Exhibit A, p. 8. Please provide copies of any documents that the Companies relied upon in making the statement that customer-sited generators simply for the purpose of generating electricity for the customer would not be cost-effective for the utilities at this time. Please explain the basis for this statement and describe the facts on which this statement is premised.

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Set 1

May 24, 2004

- JCI-IR-20. Reference Companies' Exhibit A, p. 9. Please explain why the provision of CHP services by utilities is a "natural step in the evolution of electric utility services." Please provided copies of any documents relied upon in providing your response.
- JCI-IR-21. Reference Companies' Exhibit A, p. 9. Please state whether any of the Companies currently offer or have already installed CHP systems. If so, please provide a reference to any tariff provision and/or PUC docket(s) that authorizes of the Companies to offer such facilities and/or services, and provide a complete description of the system installed, including, but not limited to, the customer, the size of the system, the type of system installed, whether the equipment was obtained by competitive bid, etc.
- JCI-IR-22. Reference Companies' Exhibit A, p. 9. Please state whether any of the Companies have conducted an analysis of their systems and/or customers to determine what portion of the system and/or which customers would benefit most from the installation of CHP systems. If so, please provide copies of any documents pertaining to such analyses.

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Information Requests Of Johnson Controls, Inc.

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- JCI-IR-23. Reference Companies' Exhibit A, p. 9. Please state whether any of the Companies is currently engaged in marketing CHP equipment and/or services to its customers. If so, please describe these activities and provide copies of any documents utilized in such activities. Please provide a reference to the tariff provision and/or PUC order that authorizes such activities.
- JCI-IR-24. Please state whether any of the Companies has signed any agreements – exclusive or otherwise – with suppliers of CHP equipment to provide such equipment for the Companies' CHP projects. If so, please provide copies of any such agreements. Were competitive bid procedures used to select the supplier(s) with whom such agreements were signed? Why or why not?
- JCI-IR-25. Reference Companies' Exhibit A, p. 10. Please provide a reference to each PUC docket in which a Tariff Rule No. 4 filing has been made to date. Have any of the Companies requested confidential treatment of such filings or portions thereof? If so, why?
- JCI-IR-26. Reference Companies' Exhibit A, p. 10. Please provide copies of any documents that support the statement that “[t]he independent implementation of DG/CHP results in a loss of revenue to the utility” Please explain the basis for this statement and describe the facts on which this statement is premised. Please provide copies of any documents prepared for any of the

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Set 1

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Companies or at their direction that quantify the loss of revenue.

- JCI-IR-27. Reference Companies' Exhibit A, p. 10. Please provide copies of any documents prepared by any of the Companies or at their direction that quantify and/or describe any benefits to each Company's system that could result from the independent implementation of DG/CHP.
- JCI-IR-28. Reference Companies' Exhibit A, p. 10. Please explain why and how utility implementation of DG/CHP would avoid the loss of revenue to the utility. Please provide copies of any documents relied upon to support your response.
- JCI-IR-29. Reference Companies' Exhibit A, p. 10. Please explain how utility participation in the CHP market results in "one stop shopping."
- JCI-IR-30. Reference Companies' Exhibit A, p. 11. Please provide copies of any documents relied upon by any of the Companies to support the statement that utility participation in the DG/CHP market "validates the benefits of CHP for those customers that are in a "waiting (sic)-and-see" mode." Please explain the basis for this statement and describe the facts on which this statement is premised.

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Of The State Of Hawaii

Docket No. 03-0371

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Set 1

May 24, 2004

- JCI-IR-31. Reference Companies' Exhibit A, p. 11. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[c]ustomers may have greater confidence in the technology if the utility is involved.” Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-32. Reference Companies' Exhibit A, p. 11. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[t]here is broad-based customer support for a utility CHP program.” Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-33. Reference Companies' Exhibit A, p. 11. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[m]any customers do not want to own, operate or maintain CHP units.” Please explain the basis for this statement and describe the facts on which this statement is premised.

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Of The State Of Hawaii

Docket No. 03-0371

Information Requests Of Johnson Controls, Inc.

Set 1

May 24, 2004

- JCI-IR-34. Reference Companies' Exhibit A, p. 11. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[s]ome customers may be uncertain about the staying power of mainland-based vendors, but trust the utility to be there for the long-term and to work out any problems that may occur.” Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-35. Reference Companies' Exhibit A, p. 11. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[m]ost customers at least want the utility to be an option they can consider.” Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-36. Reference Companies' Exhibit A, p. 11. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[m]any customers want to focus on their core business and let the utility be the energy company.” Please explain the basis for this statement and describe the facts on which this statement is premised.

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- JCI-IR-37. Reference Companies' Exhibit A, p. 11. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[h]otel operators, for instance, generally do not want to own, operate and maintain power systems. They want to reduce operating costs in any way they can, and they want to do it with a minimal amount of investment and risk on their part.” Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-38. Reference Companies' Exhibit A, p. 11. The text references a “favorable response of most customers.” Please provide details concerning any and all activities that elicited this response. If the responses were written, please provide copies of those responses. If there are any documents addressing, analyzing or summarizing these responses, please provide copies of them.
- JCI-IR-39. Reference Companies' Exhibit A, p. 12. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[c]ustomers seem to appreciate the fact that the utility is not in the equipment sales business and will, consequently, also evaluate other options such as the installation of energy conservation measures, tailored to the unique needs of that customers and facility.” Please explain the basis for this statement and describe the facts on which this statement is premised.

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- JCI-IR-40. Reference Companies' Exhibit A, p. 12. Please provide copies of any documents relied upon by any of the Companies to support the statement that "Customers are asking the utility to offer a full range of services related to their energy needs." Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-41. Reference Companies' Exhibit A, p. 12. Is it the Companies position that other entities cannot or do not offer to assist an individual customer in determining which options are best for that customer's site? If yes, why and provide copies of all documents relied upon to support your response.
- JCI-IR-42. Reference Companies' Exhibit A, p. 12. Please provide copies of any documents relied upon by any of the Companies to support the statement that "[s]ince the utility is not in the equipment sales business, customers indicate that they are more confident that the utility will do a more objective job of analyzing the options and helping the customer to find the optimal energy solution for their site." Please explain the basis for this statement and describe the facts on which this statement is premised.

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- JCI-IR-43. Reference Companies' Exhibit A, p. 13. Please describe the "appropriate circumstances" where any of the Companies would use DG to provide substation-sited peaking generation, and substation-sited generation to address case-specific T&D problems.
- JCI-IR-44. Reference Companies' Exhibit A, p. 14. Please explain why CHP programs should be reviewed as a supply-side planning tool under the criteria in the IRP Framework. Please provide copies of any documents relied upon by the Companies as support for this statement and this response.
- JCI-IR-45. Reference Companies' Exhibit A, p. 14. Please explain when and why a particular CHP system would fall outside the scope of the proposed CHP program. What factors would cause the Companies to install a CHP system that did not meet the Eligibility Criteria proposed in the CHP Application.
- JCI-IR-46. Reference Companies' Exhibit A, p. 14. Should any costs associated with a utility CHP program be recovered from ratepayers? Why or why not? Please provide copies of any documents prepared by any of the Companies or at their direction that address this issue.
- JCI-IR-47. Reference Companies' Exhibit A, p. 15. Is the utility's CHP program required to comply with Tariff Rule 14.H? If not, why not?

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- JCI-IR-48. Reference Companies' Exhibit A, p. 15. Please describe the "utility tariff provisions that insure that utility customers will not be unduly burdened by the provision of utility back-up service to customers with customer-sited CHP systems of DG." Please provide copies of any documents relied upon in your response. Would the utility's CHP systems be subject to these same tariff provisions? If not, why not?
- JCI-IR-49. Reference Companies' Exhibit A, p. 15. Please explain what circumstances would cause the Companies to take the position that the Commission should regulate third-party owned installations. Please provide copies of any documents relied upon in providing this response.
- JCI-IR-50. Reference Companies' Exhibit A, p. 16. Please provide copies of any documents that analyze, quantify, or explain the practical limit to the amount of DG on distribution circuits.
- JCI-IR-51. Reference Companies' Exhibit A, p. 16. Please provide copies of all documents that were relied upon by the Companies that address why the initial installations of small-scale DG units at customers' sites (for other than emergency backup) were problematic. Please explain the basis for this statement and describe the facts on which this statement is premised.

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- JCI-IR-52. Reference Companies' Exhibit A, p. 16. Please provide a list of small-scale DG units that are currently located at customers' sites (for other than emergency backup) and either operational or that will become operational during 2004. Specify the type of equipment installed and whether any of the Companies supplied that equipment or whether a third party did so.
- JCI-IR-53. Reference Companies' Exhibit A, p. 16. Please identify the units that had performance problems, fuel problems, and maintenance problems. Specify the type of unit involved, the manufacturer, and whether any of the Companies supplied that equipment or whether a third part did so. Identify the specific nature of each such problem and state how the problem(s) was remedied.
- JCI-IR-54. Reference Companies' Exhibit A, p. 16. Please provide a list of the initial units that are no longer operable and/or that have been replaced. For each, state the type of unit involved, the manufacturer, when the unit was placed in service, and when the unit became inoperable or when it was replaced.

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- JCI-IR-55. Reference Companies' Exhibit A, p. 16. Please provide a list of the practical considerations that limit the ability of DG to be used on a targeted basis to defer specific T&D projects. Please provide copies of any documents relied upon in preparing your response.
- JCI-IR-56. Reference Companies' Exhibit A, p. 16. Please state how much DG must be added and reliably operated so that the peak load growth is reduced. Please provide copies of any documents prepared by any of the Companies or at their direction that address this issue.
- JCI-IR-57. Reference Companies' Exhibit A, p. 16 & 17. Please provide copies of any documents relied upon by any of the Companies to support the statement that any loss of the portion of the rate normally charged to the customer that installs DG or that has a third-party install DG for it to cover the fixed costs "must be borne by other ratepayers when rates are adjusted at the next rate case." Please explain the basis for this statement and describe the facts on which this statement is premised.

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- JCI-IR-58. Reference Companies' Exhibit A, p. 17. Please provide copies of any documents relied upon by any of the Companies to support the statement that "if the utility owns and operates the DG system, the loss of fixed costs is substantially reduced and the overall program costs and payments can be structured so that all parties (the utility, the customer, other ratepayers) are better off by having the project completed." Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-59. Reference Companies' Exhibit A, p. 17. Please provide copies of any documents that quantify the actual or expected loss of fixed costs as a result of customer or third-party DG installations.
- JCI-IR-60. Reference Companies' Exhibit A, p. 18. Must utility-installed DG comply with all interconnection requirements of Rule 14 H? If not, why not?
- JCI-IR-61. Reference Companies' Exhibit A, p. 18. Please provide copies of any documents that analyze, quantify, or explain how Rule 14 H has operated to date.

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- JCI-IR-62. Reference Companies' Exhibit A, p. 19. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[u]nless a sufficient number of DG units are in existence on a circuit to create diversity, all of the DG units must be backed up by the grid.” Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-63. Reference Companies' Exhibit A, p. 19. Is it the Companies' position that the utility must control the operations of and maintenance quality of DG installation for customer and third party DG installations? If so, why? How do the Companies propose to implement this position?
- JCI-IR-64. Reference Companies' Exhibit A, p. 19. Do the Companies agree that DG capacity should be given credit as system capacity and, if so, under what circumstances? Please provide copies of any documents relied upon in preparing your response.

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- JCI-IR-65. Reference Companies' Exhibit A, p. 20. Please provide copies of any documents prepared by any of the Companies or at their direction that analyze, quantify, and/or explain how locating DG at targeted utility substations can increase reliability. Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-66. Reference Companies' Exhibit A, p. 20. Please provide copies of any documents prepared by any of the Companies or at their direction that analyze, quantify, and/or explain how synchronous generators that are dispatchable by the utility can provide voltage support. Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-67. Reference Companies' Exhibit A, p. 20. Please provide copies of any documents prepared by any of the Companies or at their direction that analyze, quantify, and/or explain how localized generation can enhance reliability for transmission and distribution systems with a radial configuration. Please explain the basis for this statement and describe the facts on which this statement is premised.

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- JCI-IR-68. Reference Companies' Exhibit A, p. 20. Please provide copies of any documents prepared by the Companies or at their direction that analyze, quantify, and/or explain the costs that must be borne by the customer in order for a DG customer to operate isolated from the utility system. Please explain the basis for this statement and describe the facts on which this statement is based.
- JCI-IR-69. Reference Companies' Exhibit A, p. 21. Please provide copies of any documents prepared by the Companies or at their direction that analyze, quantify, and/or explain how installation of distributed generation can defer the need for new transmission and distribution ("T&D") capacity by providing customers with a nearby source of electricity that otherwise would have been provided by T&D upgrades. Please explain the basis for this statement and describe the facts on which this statement is based.
- JCI-IR-70. Reference Companies' Exhibit A, p. 21. Please provide copies of any documents that analyze, quantify and/or explain how and why the MECO/Hana diesel generator project provided an attractive alternative to installation of additional transmission infrastructure.

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- JCI-IR-71. Reference Companies' Exhibit A, p. 21. Please provide copies of any documents prepared by the Companies or at their direction that analyze, quantify, and/or explain how installation of distributed generation capacity, if sufficiently large, can help defer the need for new central plant generation. Please explain the basis for this statement and describe the facts on which this statement is based.
- JCI-IR-72. Reference Companies' Exhibit A, p. 21 & 22. Please provide copies of any documents relied upon by any of the Companies to support the statement that "these benefits would be offset (and generally more than offset) by the utility's revenue loss (and the loss of the customer's contribution to fixed costs)." Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-73. Reference Companies' Exhibit A, p. 21 & 22. Please provide copies of any documents prepared by the Companies or at their direction that analyze, quantify, and/or explain the statement that "these benefits would offset (and generally more than offset) by the utility's revenue loss (and the loss of the customer's contribution to fixed costs)."

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- JCI-IR-74. Reference Companies' Exhibit A, p. 22. Is it the Companies' position that customer-sited CHP systems installed by entities other than a utility cannot be structured so as to defer central station generation and any associated bulk transmission, and/or so as to avoid central station fuel and variable O&M costs? If so, please explain why and provide copies of any documents relied upon in preparing your response. Please provide copies of any documents prepared by the Companies or at their direction that analyze, quantify, or explain how utility CHP programs will address and achieve these benefits.
- JCI-IR-75. Reference Companies' Exhibit A, p. 22. Is it the Companies' position that O&M/fuel costs from utility owned CHP systems would be "rolled into" the utility's other O&M/fuel costs, thus providing the utility the opportunity to recover these costs through regulated rates? Please explain your response and provide copies of any documents relied upon in preparing your response.
- JCI-IR-76. Reference Companies' Exhibit A, p. 22. Please explain the reference to "any discount offered in the electricity price."

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- JCI-IR-77. Reference Companies' Exhibit A, p. 22. Please provide copies of any documents relied upon by any of the Companies to support the statement that "[t]he utility also would retain revenues (less any discount offered in the electricity price, and less revenues for electricity displaced by the use of the CHP systems' waste heat), to the extent that utility-owned CHP systems displace DG that would have been installed by the customers or third-parties had the utility not installed its CHP systems." Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-78. Reference Companies' Exhibit A, p. 22. Please provide copies of any documents prepared by the Companies or at their direction that analyze, quantify, and/or explain the statement that "[t]he utility also would retain revenues (less any discount offered in the electricity price, and less revenues for electricity displaced by the use of the CHP systems' waste heat), to the extent that utility-owned CHP systems displace DG that would have been installed by the customers or third-parties had the utility not installed its CHP systems." Please explain the basis for this statement and describe the facts on which this statement is premised.

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- JCI-IR-79. Reference Companies' Exhibit A, p. 23. Please provide copies of any documents prepared by the Companies or at their direction that analyze, quantify, or explain the reduction in transmission line losses and the associated efficiency improvements.
- JCI-IR-80. Reference Companies' Exhibit A, p. 24. Please explain the statement that “[i]n some cases, however, the small scale of distributed generation may not be sufficient to keep up with overall system load growth.” Please provide copies of any documents relied upon in preparing your response.
- JCI-IR-81. Reference Companies' Exhibit A, p. 24. Please provide copies of any documents prepared by the Companies or at their direction that analyze or quantify the statements made concerning the impact of DG on air emissions.
- JCI-IR-82. Reference Companies' Exhibit A, p. 26. Please provide copies of any documents prepared by the Companies or at their direction that forecast the growth in distributed generation.
- JCI-IR-83. Reference Companies' Exhibit A, p. 26. Please provide copies of the most recent forecasted load growth prepared by HECO, HELCO, and MECO, or at their direction.

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- JCI-IR-84. Reference Companies' Exhibit A, p. 26. Please provide copies of any documents relied upon by any of the Companies to support the statement that "[t]he amount of forecasted load growth is much higher than can be met with distributed generation alone, given the relatively small scale of distributed generation systems." Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-85. Reference Companies' Exhibit A, p. 26. Please provide copies of any documents prepared by any of the Companies or at their direction that analyze, quantify, or explain the amount of fossil fuel reduction that might be achievable in Hawaii through the use of distributed generation.
- JCI-IR-86. Reference Companies' Exhibit A, p. 27. Please provide copies of any documents relied upon by any of the Companies to support the statement that "CHP systems are technically and economically feasible." Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-87. Reference Companies' Exhibit A, p. 28 & 29. Have any of the Companies conducted any technical reviews and study processes under Rule 14.H since its inception? If so, please provide copies.

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- JCI-IR-88. Reference Companies' Exhibit A, p. 29. Please provide copies in electronic format of each of the Companies Rule 14.H tariff sheets.
- JCI-IR-89. Reference Companies' Exhibit A, p. 30. Please provide copies of any documents prepared by any of the Companies or at their direction that analyze, quantify, or explain the amount of lost energy sales as a result of customer-sited CHP systems or DG.
- JCI-IR-90. Reference Companies' Exhibit A, p. 30. Please provide copies of any documents prepared by any of the Companies or at their direction that analyze, quantify, or explain the "significant amount of demand and customer costs" that are not recovered as a result of lost energy sales related to customer-sited CHP.
- JCI-IR-91. Reference Companies' Exhibit A, p. 30. Please state the amount of demand costs that are recovered through energy rates and provide copies of any documents that support your response.
- JCI-IR-92. Reference Companies' Exhibit A, p. 31. Please provide copies of any documents relied upon by any of the Companies to support the statements concerning uneconomic bypass. Please explain the basis for these statements and describe the facts on which these statements are premised.

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- JCI-IR-93. Reference Companies' Exhibit A, p. 31. Please provide copies of any documents prepared by any of the Companies or at their direction that analyze, quantify, and/or explain what is a significant loss of load due to uneconomic bypass, what impact this would have on each Company's revenues, and what impact this would have on the remaining customers' rates.
- JCI-IR-94. Reference Companies' Exhibit A, p. 33. Please provide copies of any documents prepared by the Companies or at their direction in the current round of IRP planning that analyze, quantify, or explain the potential contribution of DG/CHP technologies to meet electrical needs of customers.
- JCI-IR-95. Reference Companies' Exhibit A, p. 33. Have there been any changes to or updates of the CHP analysis presented in Docket No. 03-0366? If so, please provide copies of any documents that reflect such changes and/or updates.
- JCI-IR-96. Reference Companies' Exhibit A, p. 35. Please provide copies of any documents relied upon by any of the Companies to support the statement that "CHP installations would be cost-effective in the IRP sense (based on the quantifiable and qualitative costs and benefits addressed in the CHP Application)." Please explain the basis for this statement and describe the facts on which this statement is premised.

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- JCI-IR-97. Reference Companies' Exhibit A, p. 36. Have any of the Companies prepared any proposals or documents concerning form contracts, DG tariff structures, or a process to demonstrate ratepayer benefits? If so, please provide copies of any documents addressing these issues.
- JCI-IR-98. Reference Companies' Exhibit A, p. 36. Please explain how fuel cost methodologies should be revised to accommodate DG. Please provide copies of any documents that address this issue.
- JCI-IR-99. Reference Companies' Exhibit A, p. 38. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[p]referred supplier arrangements for CHP systems can help to make the systems cost-effective, price competitive, and sustainable.” Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-100. Reference Companies' Exhibit A, p. 38. Please define the term “preferred supplier arrangements” and state whether such arrangements should or do require prior approval by the Commission.

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- JCI-IR-101. Reference Companies' Exhibit A, p. 38. If authorized to enter into preferred supplier arrangements, do the Companies propose to use competitive bidding procedures to award such arrangements? If not, why not?
- JCI-IR-102. Reference Companies' Exhibit A, p. 38. Do the Companies object to filing preferred supplier arrangements with the Commission for their approval prior to executing or implementing such arrangements? If not, why not?
- JCI-IR-103. Reference Companies' Exhibit A, p. 38. How many suppliers other than Hess were contacted by the Companies prior to entering into the agreement with Hess? Please identify each and provide any details and documents associated with each such contact.
- JCI-IR-104. Reference Companies' Exhibit A, p. 38. Did any suppliers other than Hess contact the Companies concerning the preferred supplier arrangements? Please identify each and provide any details and documents associated with each such contact.

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- JCI-IR-105. Reference Companies' Exhibit A, p. 38. Please state whether any of the Companies has ever stated in any fashion that in order to be considered for a preferred supplier arrangement, a potential supplier must agree not to contest the Companies' CHP Application and/or that the potential supplier must agree not to participate or intervene in any Commission proceeding. If so, identify each such instance and provide any details and documents associated with each.
- JCI-IR-106. Reference Companies' Exhibit A, p. 38. Please state whether any of the Companies has ever stated in any fashion that in order to be considered for a preferred supplier arrangement, a potential supplier must withdraw from a Commission proceeding. If so, identify each such instance and provide any details and documents associated with each.
- JCI-IR-107. Reference Companies' Exhibit A, p. 38. Please state whether any of the Companies has ever refused to enter into a preferred supplier arrangement or any other type of arrangement with another entity because that entity had intervened in any docket before the Commission. If so, please identify each such instance and provide any details and documents associated with each.

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JCI-IR-108. Reference Companies' Exhibit A, p. 38. Please state whether the Companies are aware of any other suppliers or other entities that offers skid mounted, pre-wired, pre-piped and factory tested combined heat and power systems. If so, please identify each, state whether the Companies offered to enter into a preferred supplier agreement with each, and, if the Companies did not offer to enter into such an agreement, please state the reason(s) why not. Please provide copies of any documents related to each such instance.

JCI-IR-109. Reference Companies' Exhibit A, p. 38. For each individual on-site system supplied by or proposed to be supplied by Hess for the Companies, please state:

- a. whether Hess or one or more of the Companies is responsible for installation of the system;
- b. whether Hess or one or more of the Companies will own the system;
- c. whether Hess or one or more of the Companies will operate each system; and
- d. whether Hess or one or more of the Companies will maintain each system.

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- JCI-IR-110. Reference Companies' Exhibit A, p. 39. Is it the Companies' position that no entity serving Hawaii other than Hess has such proven capabilities? Please explain your response and provide copies of any documents that analyze, quantify, and/or explain the proven capabilities of each entity, including Hess, that the Companies considered in entering into its preferred supplier agreement.
- JCI-IR-111. Reference Companies' Exhibit A, p. 39. Please provide complete details concerning any project already completed or that will be completed within the next two years under the Hess Agreement.
- JCI-IR-112. Reference Companies' Exhibit A, p. 39. Please describe the types of information concerning the specific CHP customer and the Companies' system that Hess has access to under the terms of the preferred supplier agreement. Is this same information made available to other entities that may be interested in bidding to supply CHP equipment and services to a customer and if not, why not? Is the customer able to request copies of such information to use to obtain bids from other entities that may be interested in bidding to supply CHP equipment and services to that customer and if not, why not?

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- JCI-IR-113. Reference Companies' Exhibit A, p. 39. Please provide copies of any documents relied upon by any of the Companies to support the statement that “[i]t appears that the nature of the Hess-HECO agreement is still largely misunderstood.” Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-114. Reference Companies' Exhibit A, p. 39. Please identify those circumstances where the standard Hess Microgen offering does not meet the needs of the customer and [the Companies] have worked with Hess to substitute another vendor’s reciprocating engine generator set for the standard offered by Hess. Please provide any details concerning such circumstances and any documents relied upon by the Companies in making this statement.
- JCI-IR-115. Reference Companies' Exhibit A, p. 39. Please provide a list of those projects that require generating units larger than any offered by Hess Microgen. For each such project:
- a. identify the project and the generating unit required;
 - b. state whether the Companies intend to solicit competitive bids for the generating units and, if not, why not; and

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- c. state whether the Companies have informed, in any fashion, any entities that the Companies will not consider utilizing that entities' services or equipment for each such project and state the reason(s) for that decision and explain why that decision was made.

- JCI-IR-116. Reference Companies' Exhibit A, p. 39. Please provide copies of any documents that analyze, quantify, or explain the significant efficiencies and cost savings resulting from the Hess agreement as compared to efficiencies and cost savings that would have resulted had another entity entered into a preferred supplier agreement with one of the Companies.
- JCI-IR-117. Reference Companies' Exhibit A, p. 39. Please provide a copy of the original Hess-HECO agreement and all amendments and all changes thereto. Please state whether the agreement is still effective and, if not, why not.
- JCI-IR-118. Reference Companies' Exhibit A, p. 39. Please state whether any of the Companies has had any discussions or any other type of contact with Johnson Controls, Inc., concerning any matters associated with distributed generation and CHP. If so, please provide details concerning such discussions and/or contacts, and provide copies of any documents concerning such discussions and/or contacts.

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Information Requests From Johnson Controls, Inc. ("JCI") To Hess Microgen,
LLC ("Hess")

- JCI-IR-119. Please provide a complete copy of all data requests served by all other Parties and Participants to this proceeding on Hess and Hess' responses thereto.
- JCI-IR-120. p. 2. Please provide copies of any documents relied upon by Hess to support the statement that "[t]he participation of the utilities will most likely increase the amount of DG systems deployed." Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-121. p. 2. Please state whether Hess agrees that costs associated with CHP should be included in the cost of service and rate base of a regulated utility and explain the reason for your response.
- JCI-IR-122. p. 2. Please state whether Hess has made any agreement with HECO, HELCO, or MECO to support the statement that "DG projects should be owned and operated by [] regulated electric utility companies." If so, please provide any details and/or documents concerning such agreements.
- JCI-IR-123. p. 3. Has Hess developed any standards concerning how the Commission can ensure that "the utilities are dealing fairly and in a timely manner with the private companies who are offering DG to customers." If so, please identify those standards.

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- JCI-IR-124. p. 3. How can the Commission ensure that the utilities and the private companies are competing on a level playing field?
- JCI-IR-125. p. 3. Does Hess favor the use of standby charges? Please explain your answer.
- JCI-IR-126. p. 3. Please provide copies of any documents relied upon by Hess to support the statement that “because on-site generation is closer to the load there is a vast reduction in traditional T&D line losses that are usually experienced by the traditional utilities’ systems.” Please explain the basis for this statement and describe the facts on which this statement is premised.
- JCI-IR-127. p. 6. Please provide copies of any documents relied upon by Hess to support the statements made in section 3 concerning the utility costs that can be avoided by distributed generation. Please explain the basis for these statements and the facts on which these statements are premised.
- JCI-IR-128. p. 9. Please provide a copy of the National Interconnection Standard IEEE 1547. Is Hess proposing to replace Tariff Rule 14.H with this standard? Why or why not?

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JCI-IR-129. p. 10. Please state what types of vital information Hess believes should be applied to private companies in order to allow for the expeditious deployment of DG.

Information Requests From Johnson Controls, Inc. ("JCI") To Life Of The Land ("LOL").

JCI-IR-130. Please provide a complete copy of all data requests served by all other Parties and Participants to this proceeding on LOL and LOL's responses thereto.

Information Requests From Johnson Controls, Inc. ("JCI") To Department of Business Economic Development And Tourism ("DBEDT").

JCI-IR-131. Please provide a complete copy of all data requests served by all other Parties and Participants to this proceeding on DBEDT and DBEDT's responses thereto.

Information Requests From Johnson Controls, Inc. ("JCI") To The County Of Maui ("Maui")

JCI-IR-132. Please provide a complete copy of all data requests served by all other Parties and Participants to this proceeding on Maui and Maui's responses thereto.

Information Requests From Johnson Controls, Inc. ("JCI") To The Division Of Consumer Advocate ("CA")

JCI-IR-133. Please provide a complete copy of all data requests served by all other Parties and Participants to this proceeding on the CA and the CA's responses thereto.

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Information Requests From Johnson Controls, Inc. ("JCI") To Kauai Island
Utility Cooperative ("KIUC")

JCI-IR-134. Please provide a complete copy of all data requests served by all other Parties
and Participants to this proceeding on KIUC and KIUC's responses thereto.

Information Requests From Johnson Controls, Inc. ("JCI") To The Gas Company ("TGC")

JCI-IR-135. Please provide a complete copy of all data requests served by all other Parties
and Participants to this proceeding on TGC and TGC's responses thereto.

Information Requests From Johnson Controls, Inc. ("JCI") To Hawaii Renewable
Energy Alliance ("HREA")

JCI-IR-136. Please provide a complete copy of all data requests served by all other Parties
and Participants to this proceeding on HREA and HREA's responses thereto.

Information Requests From Johnson Controls, Inc. ("JCI") To The County Of Kauai ("Kauai")

JCI-IR-137. Please provide a complete copy of all data requests served by all other Parties
and Participants to this proceeding on Kauai and Kauai's responses thereto.